

## **SECTION 4**

### **HOSPITALIZATIONS**

This section of the report analyzes data from the Office of Statewide Health Planning and Development (OSHPD) Hospital Patient Discharge Files. The discharge record is the record of a hospitalization episode. The OSHPD collects this information from acute care hospitals throughout California. Data for this report are for hospital discharges which occurred in 1993. In this report, hospitalizations and hospital discharges are interchangeable.

In the following tables the number of hospital discharges, not population rates, are the basis for analysis because the Hospital Patient Discharge Files consist of numbers of hospital discharges, not numbers of individuals who are discharged from the hospital. Some individuals have more than one hospitalization during a given year.

An analysis of the number of hospital discharges (including discharges related to pregnancy and discharges of healthy newborns) shows that about three fourths of hospital patients had only one hospitalization during 1993, 14 percent had two, and 8 percent had three or more. In order to examine the reasons why women are hospitalized, this analysis is based on the total number of hospitalizations. Records for multiple visits by the same patient are not excluded.

As shown in Table 4.1, there were 3,664,629 hospitalizations in 1993 of which 2,188,173 (59.7 percent) were for females and 1,476,322 (40.3 percent) were for males. The ratio of all female hospitalizations to all male hospitalizations is 1.5, indicating that females were hospitalized about one and one-half times more often than males. However, when the 635,763 hospitalizations for pregnancy related conditions and the 572,594 healthy newborns who did not require a hospital stay for birth complications were excluded, the ratio dropped to 1.1, making the number of hospitalizations almost equal between the sexes.

Research into women's health has traditionally focused on pregnancy and childbirth. According to the discharge data, about one-third (33.3 percent) of hospitalizations for all females were for pregnancy and childbirth. Table 4.2 displays the number and percent of pregnancy-related hospitalizations for females by race/ethnicity. The percent of hospitalizations for pregnancy and childbirth varied dramatically among race/ethnic groups; women identified as "Other Race" had the highest percent (64.7) and Hispanic females had the second-highest percent (46.3). Among the remaining race/ethnic groups, the percent of hospitalizations that were for pregnancy was 38.9 percent for Asian/Pacific Islander women, 31.2 percent for Native American women, and 29.7 percent for African American women. White females had the lowest percentage of hospitalizations for pregnancy/childbirth (20.7 percent).

#### **Length of Stay**

Data for the average length of hospital stay per admission (ALOS), expressed as number of days, are displayed in Table 4.3. The ALOS for all hospitalizations, both male and female, during 1993 was 5.9 days. Examining the length of stay data by gender shows that the ALOS for females for all hospitalizations was 5.3 days compared to 6.9 days for males. When the 635,763

hospitalizations for females for pregnancy/childbirth were excluded, the ALOS for females became identical to that of males (i.e., 6.9 days).

Examination of ALOS for females by race/ethnicity shows that the highest ALOS for hospitalizations including pregnancy/childbirth was for white females at 6.0 followed by African American females at 5.8. The lowest ALOS was for Hispanic females, at 3.6. However, when data for pregnancy/childbirth were excluded, the highest ALOS was for Native American females (7.4) followed by African American females (7.2) and white females (7.1). The lowest ALOS was again for Hispanic females, at 5.8 days.

The remaining portion of this section on hospitalizations focuses on data for hospitalizations for medical reasons other than pregnancy/childbirth and discharges of healthy newborns, but including records of newborns admitted to the hospital because of birth-related complications. The total number of hospitalizations included in this analysis was 2,456,272.

### **Causes of Hospitalization**

Table 4.4 shows the ratio of female to male hospitalization for selected causes using codes from the International Classification of Diseases, Revision 9 (ICD-9). This ratio was highest for eating disorders, bulimia and anorexia. Although the total number of hospitalizations for these disorders was small, females were hospitalized 15 and 17 times more often than males. A second cause of hospitalization for which the female-male ratio was significantly greater than 1.0 was hospitalization for kidney disease, for which women were hospitalized four times as often as males. In 1993, there were 10,123 hospital episodes for kidney disease among females compared with 2,306 for males. Other causes for which females were hospitalized more often than males were osteoporosis and arthritis; females were hospitalized over one and one-half times as often for each of these. Conversely, causes for which females were hospitalized less often than males included AIDS, (about one tenth as often), cirrhosis, alcohol and drug psychosis and dependency (both about one-half as often).

Table 4.5 shows the number of female hospitalizations by race/ethnicity for selected causes. Table 4.6 shows the percent of hospitalizations for each of these causes by race/ethnicity. The most frequent cause of hospitalization for all women and for each race/ethnic group was heart disease, accounting for 140,172 episodes in 1993. Cancer was the second leading cause of hospitalization for white and Asian/Pacific Islander women, but it was the third most frequent cause for Hispanic and African American women and the fifth most frequent for Native American women. The third most frequent cause of hospitalization for all females was bone fractures. It was the third highest for white and Native American females, but the fourth for Asian/Pacific Islander women, and fifth for Hispanic and African American women. Hospitalization for pneumonia/influenza was the fourth most frequent cause of hospitalization for all females. It was the fourth most frequent among both white and African American females, but it was second most frequent for Hispanic and Native American females and third for Asian/Pacific Islander females.

Table 4.7 shows the race/ethnic distribution for these selected causes of hospitalization. White women made up less than 60 percent of the female population, but received 72.6 percent of all hospitalizations. They were over-represented in hospitalizations for bulimia (90.6 percent), anorexia (85.4 percent), Alzheimer's' Disease and other forms of dementia (82.1 percent), and

alcohol-related problems (87.1 percent). They were under-represented in hospitalizations for AIDS (36.4 percent). African American women made up 7 percent of the population. They accounted for 8.8 percent of all hospitalizations, 31.1 percent of AIDS-related hospitalizations, and 17.6 percent of diabetes-related hospitalizations. African Americans were under-represented in hospitalizations for anorexia and bulimia (2.4 and 2.9 percent) and fractures (4.8 percent). Hispanic women made up 25 percent of the female population. They were under-represented in nearly all causes of hospitalization. Asian women made up about 9 percent of the population, but received 19 percent of hospitalizations for cirrhosis of the liver.

### **Multiple Causes for Hospitalizations**

There are several diseases affecting women that are not usually coded as the primary cause for hospitalization, including: diabetes, arthritis, kidney disease and osteoporosis. The discharge files contain not only the primary cause for hospitalization, but four additional contributing causes. Table 4.8 displays the number of hospitalizations for diabetes, kidney disease, osteoporosis, and arthritis in 1993, comparing the number of admissions for which the disorder was reported as the principal cause with the number for which the disorder was included among the four contributing causes of hospitalization.

The disease listed most frequently among the contributing causes of hospitalization was diabetes. There were 17,295 hospitalizations in 1993 for which diabetes was the principal cause, but 146,249 for which diabetes was reported among the contributing causes. This is an eight-fold increase. The number of hospitalizations for kidney disease almost doubled in number when four additional contributing causes were included, increasing from 10,123 to 17,822. There were 8,646 admissions with osteoporosis listed as the primary cause of hospitalization in 1993, but this increased three-fold, to a total of 26,783, by including cases for which it was listed as a contributory cause. Similarly, the number of admissions for arthritis more than doubled, increasing from 22,582 to 58,372 admissions, when cases with arthritis listed as a contributing cause were included.

Similar proportional increases in admissions for these four conditions were found among females of all race/ethnic groups. For diabetes, Asian/Pacific Islander women had the largest increase in hospitalizations when cases listing diabetes as a contributing cause were included (over 11 times greater). The smallest increase was seen for African American females (a six-fold increase). Kidney disease showed the smallest variation among race/ethnic groups with Hispanic females having the largest increase, from 3,076 as a primary cause and increasing to 6,261 when four additional contributing causes were included for hospitalization. The smallest increase was seen among Native American females. The number of 1993 hospitalizations for osteoporosis was highest for white females and it increased more than three-fold, from 6,957 to 22,321, by including cases where it was reported as a contributing cause. The number of osteoporosis hospitalizations also increased among Asian/Pacific Islander women from 283 to 856. For arthritis, the number of hospitalizations increased most among African American females, rising from 1,378 to 4,652. Among Asian/Pacific Islander women, the number of arthritis hospitalizations increased from 531 to 1,746.

### **Hospital Discharges for External Causes of Injury (E-Codes)**

Hospital record coding for the cause of hospitalization has traditionally used the International

Classification of Diseases, 9th Revision, for Clinical Medicine (ICD-9-CM codes). However, in 1991 the ICD-9 E-Series was added to the discharge record to identify the external causes of injury. The E-Codes are entered in a separate location from the standard ICD-9 codes in the discharge file.

In 1993, 12.1 percent of all California hospital discharges were for injury, based on the ICD-9 external causes of injury (E-Codes). As shown in Table 4.9, the ratio of female to male hospital discharge for injuries due to external causes was nearly equal (0.95). Of the total of 318,420 hospital discharges for external causes, 154,953 were for females and 163,457 were for males. Males and females were hospitalized about the same number of times for poisonings, as well as complications due to surgical procedures. Women were hospitalized only half as often for motor vehicle crashes, other transport accidents, fires, drowning, and other accidents. For homicide, females were hospitalized only one-fifth as often as males. However, females accounted for 40-50 percent more hospitalizations than did males for falls, for suicides, and for adverse reactions to drugs in therapeutic use.

The number of hospital discharges for external causes, stratified by race/ethnicity, is shown in Table 4.10 and the percentages are shown in Table 4.11. In 1993, the single largest cause of hospitalization for women of all race/ethnic groups was falls, accounting for 51,801 hospitalizations. The second most frequent cause was adverse effects of prescribed drugs (46,579) and the third most frequent cause was motor vehicle crashes (14,015).

Falls constituted the largest percent of hospitalizations for white females (37.6 percent) and Native American females (27.0 percent), but adverse effects of drugs in therapeutic use was highest for African American (32.0 percent) and Asian/Pacific Islander (32.5 percent) females. Hispanic females had almost the same percent for both causes (24.2 and 24.5 percent). For the second-largest external cause of injury, those two causes were in reverse order: adverse effects of drugs in therapeutic use was the second leading cause of hospitalization for white females (31.9 percent) and Native American females (22.4 percent), while falls was second for African American (18.2 percent) and Asian/Pacific Islander (26.1 percent) females. The third largest percent of E-Code hospitalizations was motor vehicle crashes, for all race/ethnic categories. These three categories combined accounted for almost three-fourths of all hospitalizations for external causes (72.5 percent).

### **Hospital Discharges for Cancer**

Hospital discharges for cancer, for all causes and for specific sites, for males and females are shown in Table 4.12. The total number of hospital discharges for cancer during 1993 were 131,732, with females having a slightly higher number (68,292) compared with males (63,440). For females the greatest number of cancer-related hospital discharges was for breast cancer (13,910), while for males the greatest number was for cancer of the male genital organs (12,899). The second and third leading causes of cancer-related hospitalization for both males and females, were colorectal and lung cancer.

Females were hospitalized half as often as males for cancer of the lip, pharynx and oral cavity; respiratory organs; and bladder and urinary tract. On the other hand, females were hospitalized about one-third more often for Hodgkin's lymphoma and other forms of lymphatic cancer.

Tables 4.13 and 4.14 display the number and percent distribution of female cancer hospitalizations by race/ethnicity. As seen in Table 4.13, there are noticeable differences among the race/ethnic groups for cancer hospitalizations. Women of all race/ethnic groups except Native Americans were hospitalized most frequently for breast cancer; Native American women were hospitalized most frequently for colorectal cancer. For white, African American and Asian/Pacific Islander women, the second highest percent of hospitalizations were for colorectal cancer, while for Hispanic and Native American females it was cancer of the cervix or uterus. The third most frequent cause of hospitalizations among females was lung cancer among whites and African Americans, colorectal cancer for Hispanics, cancer of the cervix and uterus for Asian/Pacific Islanders and breast cancer among Native Americans.

The percent distributions displayed in Table 4.14 show some interesting comparisons among females in different race/ethnic groups. The percent of hospitalizations for lung cancer were highest for white women (9.7 percent), which was only slightly higher than for African American women (9.0 percent), but almost three times higher than for Hispanic women (3.7 percent). Hispanic and Native American women had a higher percent of hospitalizations for cancer of the cervix when compared with the other race/ethnic groups, (15.1 percent and 13.0 percent respectively). Hospitalizations for colorectal cancer were highest for Native American women (15.1 percent), African American women (11.1 percent) and white women (10.7 percent).

### **Summary of Hospital Discharges**

The leading cause of hospitalization for women in California was pregnancy and childbirth, accounting for about one third of hospital admissions. Excluding hospitalizations for pregnancy and childbirth, the frequency and causes of hospitalization were approximately the same for males and females and were consistent with the leading causes of death. The top five causes of hospitalization among women were: heart disease, cancers, pneumonia/influenza, fractures, and COPD. These were followed by: stroke, arthritis, diabetes, acute respiratory disease and ulcers. Women were more likely than men to be hospitalized for injuries due to adverse medication reactions, falls, and suicide. Men were more likely to be admitted for homicide, motor vehicle crashes and other transport-related injuries, burns from fire, and drowning.

Almost three fourths (73.9 percent) of all hospitalizations for external causes in females were accounted for by only three causes: falls, adverse effects of drugs in therapeutic use and motor vehicle crashes. This was true for all race/ethnic groups.